ABSTRACT

Title of Thesis:	REEXAMINE THE MODERATION EFFECT OF CHILD PROTECTIVE SERVICES ON THE RELATIONSHIP BETWEEN RISK FACTORS AND CHILD SEXUAL ABUSE RECURRENCE
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Child sexual abuse influences a large part of population and brings serious outcomes to children and their families. Recurrence of abuse suggests that risk factors related to child sexual abuse have not been successfully addressed after the initial abuse, and the resources provided by child protective services (CPS) may have not been efficiently utilized. Using the latest 10-year National Child Abuse and Neglect Data System (NCANDS) data (2009-2018), this study aims to reexamine recurrence rate, the relevant risk factors, and how CPS is working to reduce the recurrence of child sexual abuse. The results show that the recurrence rates have had an upward tendency in recent years. Children receiving services were more likely to experience recurrence than those who didn't receive services, and having received more services increased their likelihood of revictimization. No significant moderation effect of services was found. Implications and limitations of this study were discussed.

REEXAMINE THE MODERATION EFFECT OF CHILD PROTECTIVE SERVICES ON THE RELATIONSHIP BETWEEN RISK FACTORS AND CHILD SEXUAL ABUSE RECURRENCE

by

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Introduction

Child maltreatment includes all kinds of physical abuse, emotional maltreatment, sexual abuse, neglect, negligence and commercial or other child exploitation, which causes the actual or potential harm to child's health, survival, or development (WHO, 2020). Millions of children in the United States are maltreated each year, which results in detrimental effects and costs billions of dollars annually (Courtney, 1998). It may lead to high risk of poor performance in school, emotional problems, sexual problems, substance use, peer rejection, and victimization when abused children get older (English, 1998; Chapple et al., 2005). It was reported in 2017 that 7 children per 1,000 were victims of neglect, 2 children per 1,000 were physically abused, 1 child were sexually abused, and 1 child were emotionally abused (Children's Bureau, 2017). Although rates of reported child sexual abuse are not high compared to other types of maltreatment, it is still especially different from others due to its unique indicators and risk factors (Sinanan, 2011). Gender difference is a notable characteristic of child sexual abuse, girls are found to be more likely to be sexually abused than boys, while there is no significant difference between girls and boys in the risk of being physically abused (Black et al, 2001a; Black et al., 2001b). On the other hand, physical harm and emotional trauma are commonly involved in child sexual abuse, but sexual behaviors are not necessarily an element of physical abuse or emotional abuse (Dube et al., 2005).

Despite persistent decreases in child sexual abuse, data show an increase in recent years. Based on the National Child Abuse and Neglect Data System (NCANDS) data, Finkelhor et al. (2020) find that generally child sexual abuse rates decreased by 62% from 1990 through 2018, which is the most significant decline compared to physical

abuse and neglect. Even so, child sexual abuse incidents in 2018 are nationally estimated to be 63,000 incidents, increasing by 6% from 2017, which is a considerable increase for the first time within fifteen years. Even though the prevalence rate of child sexual abuse is relatively low compared to other types of maltreatment, such as physical abuse (Pereda et al., 2009), it still represents a great number of children in need of assessment and protection (Sinanan, 2011).

Because the rate of child sexual abuse reported in the literature typically counts substantiated incidents, which means these incidents that were more severe than others, and CPS considered there were sufficient reason to believe alleged maltreatment occurred, the decrease of sexual abuse rate from 1990 to 2018 may be attributed to the changes of people's attitude toward reporting and law enforcement's policies and standards of substantiating incidents (Jones & Finkelhor, 2001; Schene, 1998). However, another possible contribution to the recorded decrease is that prevention and intervention efforts have been successful.

In 1980, congress passed the first comprehensive federal child protective services act, aiming at keeping the integrity of families and helping abused children who were removed from their families, and child protective services were first established. It was followed by Child Abuse Prevention and Treatment Act of 1988, which provides financial assistance for programs that were designed to prevent, identify and treat child sexual abuse and neglect. During this period, the child sexual abuse rate decreased, which may suggest that child protective services might contribute to the decrease of child sexual abuse rate. However, the possibility of referral to CPS is not equally distributed among incidents. It is found that prior CPS involvement significantly

increased the possibilities of re-referral, which were also positively related to the number of prior referrals (English et al., 1999). In other words, CPS are more likely to be involved if the victim is repeatedly abused. It makes studying revictimization important for the purpose of examining the effects of CPS.

Child sexual abuse can lead to short-term and long-term outcomes that are harmful to children's emotional reactions, physical health, sexuality, and social functioning (Browne & Finkelhor, 1986). Sexually abused children are more likely to feel fear, anger, and hostility than non-abused children (Tufts, 1984). Sleep disturbances (Anderson et al., 1981) and adolescent pregnancy (DeFrancis, 1969) are noted among sexually abused children. Besides, difficulties at school and run-away from home in their adolescence (Herman, 1981), as well as difficulty in parenting in their adulthood (DeYoung, 1982) were observed among sexually abused children.

Many researchers agree that revictimization is the most consistent outcome of child sexual abuse (Polusny & Follette, 1995; Boney-McCoy & Finkelhor, 1995; Messman & Long, 1996; Papalia et al., 2020). Sexual abuse is found to be the most common reason for re-referral to CPS compared to physical abuse, neglect and child problem behaviors (Faller, 1991). In light of outcomes that child sexual abuse may cause, recurrence is expected to lead to more destructive consequences, because it may suggest that children are constantly exposed to risk, such as keeping in contact with the offenders, which hinder their recovery from traumatic experience physically and mentally. Psychological studies find that victims experiencing sexual abuse recurrence had more symptoms of Post-Traumatic Stress Disorder (PTSD) than victims experiencing child sexual abuse alone (Arata, 2006), which may lead to difficulties in

recovery and increase victims' vulnerabilities, and finally "perpetuate a cycle of victimization through lifespan" (Pittenger et al., 2016, p.37).

Based on Belsky's (1980) ecological model, which provides a framework for connecting the intervention of CPS with the characteristics of children, the environment they live, and people they interact with, the present study aims to reexamine recurrence rates of child sexual abuse from 2009 through 2018, explore what risk factors increase the risk of recurrence, and how Child Protective Services are working to reduce the effect of risk factors and recurrence of child sexual abuse. It begins by introducing the theoretical framework and reviewing the empirical studies related to child sexual abuse recurrence and its relationship with Child Protective Services. And then the NCANDS data - Child Files from 2009 to 2018 - are used to identify the recurrence rates of child sexual abuse and risk factors related to child sexual abuse recurrence, such as the characteristics of children, their caregivers, and their familial contexts for children who experienced child sexual abuse recurrence, compared to children who experienced victimization only once. Next, the effect of Child Protective Services on child sexual abuse recurrence and those risk factors that have been identified is examined. Lastly, implications of this study and directions for future research are discussed.

Research Background

Definition of Child Sexual Abuse Recurrence

The definition of child sexual abuse recurrence can be divided into two parts: (1) the definition of child sexual abuse; (2) the definition of recurrence. World Health

Organization (1999) defines child sexual abuse as “the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society,” which includes behaviors like “the inducement or coercion of a child to engage in any unlawful sexual activity”, “the exploitative use of a child in prostitution or other unlawful sexual practices”, and “the exploitative use of children in pornographic performance and materials.” (WHO, 2003 p.75)

Prior studies have varied definitions of child sexual abuse according to a different purpose of the study, research method, and sample. As stated in Black et al.’s (2001) review article about the risk factors for child abuse, the definition of child sexual abuse in previous studies primarily includes: “(1) children identified as sexual abuse victims by a child protection agency; (2) children self-reported sexual victimization during a structured interview; (3) children reported by their parents to have been sexually victimized during a structured telephone interview…” (Black et al., 2001, p. 205). Moreover, each state of the United States may have different legal interpretations of child sexual abuse in terms of elements such as the upper limit of victim’s age, the age of perpetrator, and the types of sexual behaviors (Wyatt et al., 1986). For example, in the state of Arkansas, the sexual abuse is divided in respect of different age ranges: (1) the perpetrator is 10 years old or older and the victim is younger than 18 years old; (2) the perpetrator is at least 18 years old and the victim is younger than 16 and is not the older person’s spouse or partner; (3) the perpetrator is a caregiver to a victim under the age of 18. In the state of Illinois, child sexual abuse is defined as “A child whose parent,

immediate family member, guardian, or person residing in the same home as the child commits or allows to be committed any sex offense against the child." In the current study, the definition of child sexual abuse based on the National Child Abuse and Neglect Data System (NCANDS)'s definition of child abuse is as follows:

Child sexual abuse is an act conducted by a parent, caregiver, or other person known or not known to the child as defined under state law that results in sexual abuse.

However, just as mentioned above, the definitions of child sexual abuse in each state are diverse. For example, the age ranges for victims and offenders might be different in each state, which leads to a different composition of victims. This is one of the limitations of this study that cannot be ignored, and more prudent interpretations should be used to explain the results of this study.

Recurrence also has several distinctive definitions in previous literatures. As specified by Fluke et al. (1999), child maltreatment recurrence can be regarded as any subsequent report of maltreatment or any subsequently founded or verified report of maltreatment. More specifically, child maltreatment recurrence can be defined as any subsequent maltreatment of the same child, of another child within the family, or by the same perpetrator. There is no uniform definition of recurrence, and most studies define recurrence based on their study design and available data. The current study is restricted to sexual abuse recurrence that was before victims reached their age of eighteen, and focuses on the victim, and attempts to understand the risk factors and environments surrounding the victim. In other words, the current study focuses on "whether the victim experienced child sexual abuse repeatedly" instead of "whether the

victim was sexually abused by the same perpetrator repeatedly." For this purpose, the definition of child sexual abuse recurrence is as follows:

Child sexual abuse recurrence is a subsequent sexual abuse reported by the same child, regardless of whether the abuse was committed by the same perpetrator or by a different perpetrator, which took place after the initial sexual abuse and before a child reaches age eighteen.

Relationship between Child Sexual Abuse and Revictimization

It is widely accepted that the likelihood of revictimization is strongly associated with the characteristics of victims when they experienced the first child sexual abuse, the outcomes of the initial incident and the intervention after the initial incident (Roodman & Clum, 2001; Arata, 2002; Classen et al., 2005). Despite considerable research exploring the effects, risk factors, and intervention of child sexual abuse (Finkelhor & Baron, 1986; Beitchman et al., 1992; Mullen et al., 1993; Barth, 1991; Tremblay et al., 1999; Westcott and Jones, 1999; Banyard et al., 2004), the revictimization of child sexual abuse still need to be explored as an independent topic. Although there are few studies specifically demonstrating the difference between child sexual abuse and revictimization, the studies that exist (Cohen & Felson, 1979; Arata, 2006; Risser, 2006) indicate that they may differ in many ways, which makes revictimization a worthy research question to be investigated in depth.

One of the considerations is related to the effects of sexual abuse and revictimization. Studies conclude that repeat victims of sexual abuse showed more PTSD symptoms because repeat victims are found to have experienced more severe

abuse and a greater frequency of abuse, which may interrupt the victim's recovery from trauma (Arata, 2006). PTSD symptoms are considered to partly account for adult sexual abuse revictimization among women who experienced child sexual abuse (Risser, 2006). Besides, high-frequency and long-term sexual abuse can lead to learned helplessness, which is originally observed in an animal experiment and applied to human to explain revictimization (Peterson & Seligman, 1983). Repeat victims view victimization as an uncontrollable event and expect future victimization to occur. They attribute the cause of victimization to themselves, and learn that victimization is inevitable regardless of their response. The consequence of learned helplessness is that victims become less effective on recovery and reluctant to seek help, making them even more vulnerable to revictimization. In other words, revictimization is more likely to perpetuate a cycle of sexual abuse. We can expect that the effect of child sexual abuse revictimization continues through one's adolescence and even adulthood (Messman & Long, 1999).

Another argument is that revictimization may suggest the existence of more stable risk factors, which may influence both the initial sexual abuse and the subsequent victimization. For example, according to routine activity theory (Cohen & Felson, 1979), the occurrence of victimization requires three elements – motivated perpetrators, suitable targets, and lack of a capable guardian, and removing each of these elements can prevent victimization. If only the initial sexual abuse is examined, it might be difficult to identify the most essential element or elements that led to victimization. However, if we also study revictimization, we may find out what

element appears in every incident and mark it as the most urgent element with which we need to engage.

Lastly, since revictimization is the most consistent outcome of child sexual abuse (e.g., Polusny & Follette, 1995; Boney-McCoy & Finkelhor, 1995), it is expected to be a more direct way to evaluate the effectiveness of intervention following the initial incident, while other outcomes, such as psychological process, are usually unable to be measured directly. Intervention is important for preventing revictimization, and researchers claim that identifying contextual and relationship factors accounting for the association between intervention and revictimization helps develop effective intervention (Ullman & Vasquez, 2015), which echoes the purpose of the current study.

Child Sexual Abuse Recurrence: Theory and its Risk Factors

A large body of prior research pays attention to the effects and outcomes of child sexual abuse, and they tend to apply biological, psychological, or sociological theories to help frame their studies. For instance, attachment theory is used to account for the role played by family context, especially parent-child attachment, in the immediate and long-term effect of child sexual abuse (Alexander, 2000). However, these theories used by prior research only concern a single aspect of the theorized mechanisms such as individual development, familial background, or social support. Apparently, child sexual abuse is a complicated phenomenon. Its onset and outcomes are associated with multiple aspects of forces, including both stable and dynamic factors. There are many individuals and institutions that may have an impact on the process of occurrence, reporting, intervention, and recurrence of child sexual abuse,

such as parents, relatives, alternative caregivers, police officers, social workers, schools, neighborhoods, and broader communities. A model that includes factors of different aspects is more appropriate to be utilized to guide research on child sexual abuse. In this study, Belsky's (1980) ecological model is used to build a connection among child sexual abuse recurrence, risk factors, and child protective services.

Belsky's (1980) Ecological Model

Based on Tinbergen's (1951) concern for ontogenic development and Bronfenbrenner's (1979) ecological model, Belsky (1980) constructed a framework including four levels that consist of factors and explanations to account for the causation of the onset of child abuse and neglect. The first level is called "*ontogenic development*," which means the individual characteristics of parents that influence the family setting and their parenting role, such as their own maltreatment experience in childhood. The second level is "*the microsystem*." It represents the immediate family context in which child maltreatment occurs, such as a premature infant's cry and an elder child's physical attractiveness. The third one is called "*the exosystem*," representing formal and informal social structures related to child maltreatment, such as the neighborhood and informal social networks. According to Bronfenbrenner (1977), the child is not necessarily contained in the exosystem, but individuals or institutions in the exosystem can influence child maltreatment by impacting the immediate settings that a child is in. The last level is "*the macrosystem,*" which serves as a basic context where ontogenic development, the microsystem, and the exosystem develop. For example, the cultural value in society and belief systems may influence

the parenting style in a family. If a culture has a high tolerance for violence, child physical abuse would be more common in this culture because violence is regarded as a normal way to "educate" one's child. These factors are embedded within one another.

Sinanan (2011) utilized the ecological approach to connect factors on different levels and examine their relationships with child sexual abuse recurrence. Using the NCANDS data of 2002 to 2004, he examined a variety of factors related to the child, the caregiver, and the family as well as two Child Protective Services (family supportive and family preservation services). His research provides a good example of applying the ecological approach to the child sexual abuse recurrence study: the characteristics of the child, the relationship between the child and the perpetrator (the ontogenic development), the characteristics of the caregiver and family dysfunction (the microsystem) and Child Protective Services (the exosystem) are considered to be associated with child sexual abuse recurrence, and these factors may also have an impact on each other. For instance, some characteristics of a child, such as young age and being a female, may make him/her more likely to experience sexual abuse recurrence, and his/her unfavorable family environment may further increase his/her vulnerability to sexual abuse recurrence. Under this circumstance, the intervention of Child Protective Services may help deal with his/her terrible family relationships and protect the child from exposure to the risk, and increase his/her resilience to the future abuse (Figure 1).

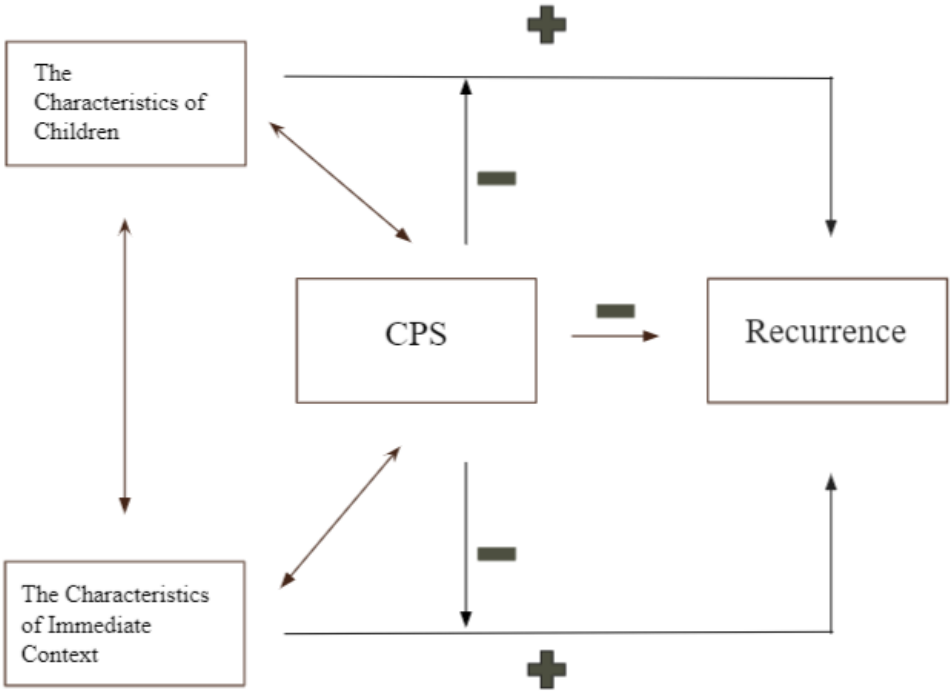

Figure 1. The Ecological Model of Child Sexual Abuse Recurrence

Risk Factors

Other factors at different levels of a child's ecological system were identified by researchers as well. However, the results of studies examining the effect of these factors are inconsistent. One example is that older children are thought to be at greater risk for sexual abuse (Black et al., 2001) but at less risk for experiencing recurrence (Fluke et al., 1999). However, there is a disagreement that age of child was not significantly related to the risk of child sexual abuse recurrence (Bae et al., 2007). The divergence of the effect of age may be attributed to different study samples, willingness to report, and "surveillance effect" of Child Protection Services. Cohort effect might be another explanation for diverse findings of age (Macmillan, 2003). In

this study, the relationship between age and child sexual abuse recurrence needs to be reexamined.

The next example is that females have been considered to be associated with higher risk of child sexual abuse recurrence than males (Bae et al., 2007; Palusci & Llardi, 2020). However, other studies argue that because girls appear more in child sexual abuse incidents, boys are underestimated by research (Putnam, 2003) since boys are usually reluctant to disclose their sexual victimization (Finkelhor & Baron, 1986) due to stigma against homosexuality, stereotype of social role, and fear of losing self-esteem (Pérez-Fuentes et al., 2013). Research shows that 4% to 16% of men were sexually victimized as a child (see Holmes, 1998 for a review). Like females, male victims of child sexual abuse are a large population. As male child sexual victims have been increasingly emphasized during the last decade (e.g., Tolin & Foa, 2006; O'Leary & Gould, 2010; Dorahy & Clearwater, 2012; see Cashmore & Shackle, 2014 for a review), reexamining the effect of gender is necessary.

Race/ethnicity is another important factor to consider. Some studies find that there is no difference in risk for child sexual abuse between white and black groups (Finkelhor & Baron, 1986; Putnam, 2003), while other studies argue that difference between white and black victims exists (Boney-McCoy & Finkelhor, 1995), but this relationship interacts with the victim's age (Sedlak, 1997). More detailed race and ethnicity subgroups such as Asian, Native Hawaiian or Pacific Island and Hispanic need to be analyzed as Finkelhor and Baron (1986) recommend.

Finally, a large set of characteristics of the child, the abuser, the family and relationship between the child and his/her abuser have also been examined. Besides

the demographics, other characteristics of the child such as disability, behavior problem and prior victimization may increase the likelihood of recurrence (Smith & Harrell, 2013). Characteristics of the abuser, such as gender, race, alcohol or drug use and disability, may influence the nature of the incident. Abusers with certain characteristics may have a greater tendency to reoffend: for instance, white perpetrators are found to be more likely to repeatedly commit child sexual abuse (Bae et al., 2007), which might due to the fact that white perpetrators are more likely to be reported for child sexual abuse by police (Hawkins, 1987; Willis & Wells, 1988). Family characteristics mark the immediate context where a child can receive social support. Adverse family events like domestic violence, financial problems, and inadequate housing may have an impact on the recurrence of child sexual abuse (Connell et al., 2007). And the relationship between victim and abuser (intra-familial or extra-familial) may decide the nature of sexual abuse (Fischer & McDonald, 1998) and the possible resources they can ask for help. For example, the victims of extra-familial sexual abuse incidents may tend to turn to their parents or other family members for help. While in the intra-familial incidents, the victims may be more likely to have assistance from professionals or authorities, because the offenders who abuse them are those who should protect them and help them in the first place.

Child Protective Services, Exposure-reducing and Recurrence

While parents and families are found to be influential resources of social support for child sexual abuse victims (Feiring et al.,1998; Lamis et al., 2014), the focus of the current study is on Child Protective Services (CPS), which plays a crucial

role in social support when familial support is absent or insufficient. Programs such as family support services and family group decision-making are considered to be able to help deal with conflict within families, reducing the risk of abuse (Sinanan, 2011).

CPS agencies are a state's government agencies responding to reports of child abuse and neglect. They are "designed to prevent or remedy abuse, neglect, or exploitation of children who may have been harmed through physical or emotional injury, sexual abuse or exploitation, or lack of adequate food, clothing or shelter, or medical care" (SSBG focus report, 2013, p.1). After receiving a report, CPS workers will assess the safety of the child and work with the child's family to reduce the risk of future abuse if the child is not currently at risk, or they will send the child to a foster home and work on reuniting the child's family or finding a new adoptive home for the child if the child is deemed to be currently at risk. Various services are provided based on the child's needs, such as food, housing, education, and counseling. Services are also provided for the child's caregivers to help them to become more capable of taking care of their children.

Previous studies have examined the association between victim services and intimate partner violence, but their results are mixed (Ditcher & Rhodes, 2011; Xie et al., 2012; etc.). Some services providing financial help and employment opportunities can help victims establish independence and escape from their violent partners (Bybee & Sullivan, 2005; Anderson, 2007; Perez & Johnson, 2008). However, negative effects are also found by studies when the intervention of services and resources is not sufficient to help victims get rid of risky situations. In their study of

intimate-partner homicide, Dugan et al. (2003) claim that prevention resources are associated with lower risk of intimate-partner homicide because they reduce victims' exposure to their violent partners, which means they reduce the time that victims have to contact with their abusive partners and reduce the likelihood of homicide. Even so, they find that the intervention of resources may increase offenders' retaliation. If the protective effect of intervention is not as large as its retaliation effect, it may lead to more homicide.

Exposure-reducing hypothesis and retaliation effect (Dugan et al., 2003) of intervention provide guidance on understanding the mechanism of the effect of services. The same as studies of intimate partner violence, studies examining the effect of Child Protective Services show ambiguous results. There is evidence that counties providing Child Protective Services (regardless of types of services available) were less likely to have child abuse recurrence (Johnson, 2000). Additionally, using the National Survey of Child and Adolescent Well-Being and the National Child Abuse and Neglect Data System data, Casanueva et al. (2015) claim that children who received services were less likely to experience recurrence of child maltreatment. Services are also found to be able to moderate the outcome of recurrence, such as the effect of maltreatment recurrence on children's delinquency (Lemmon, 2006). However, other studies suggest that postinvestigation services, such as family supportive services and family preservation services, may increase the recurrence rates due to "surveillance effect" (MacMillan et al., 2002; DePanfilis & Zuravin, 2002; Fluke et al., 1999). Families receiving these services were more

closely supervised, which increased the likelihood that a recurrence would be reported to child protective institutions and be reflected in available data.

The discrepancy among these studies might have three possible reasons. The first consideration is that prior studies used different samples and victims that have received Child Protective Services and these samples are not randomly distributed among victim groups. Incidents that have been reported to Child Protective Services were more severe in nature; additionally, less severe incidents are less likely to be substantiated by those institutions and less likely to receive services (Brown, 1998). If the intervention is not efficient enough to address victims' needs or help them get rid of risky situation, there would be more child sexual abuse recurrence because recurrent incidents are more likely to be responded and recorded.

In addition, previous studies also differ in their measurements of how services are delivered. Some studies point out that the duration of services is not associated with recurrence (Johnson & Clancy, 1989), but that the intensity of service contact (Johnson, 1995; Luttrell et al., 1995) and attendance at services (DePanfilis & Zuravin, 2001) have an effect on recurrence. The measures used for the delivery of services can influence the findings concerning the relationship between services and the recurrence of child abuse.

It is also the case that the types of services included in studies may influence the results of studies. The effect of services is highly associated with the nature of services (Keller et al., 1989); different services have distinct targets and aim at addressing different aspects of problems. Some researchers find that engaging in post-investigation services is related to an increase of recurrence rates (DePanfilis &

Zuravin, 2002; Fluke et al., 1999) that may be explained by "surveillance effect." On the contrary, some specific services were found effective in decreasing the recurrence rate. For instance, Sinanan (2011) finds family preservation services can statistically reduce the likelihood of child sexual abuse because families receiving family preservation services were at a greater risk of child sexual abuse, which makes them more likely to receive help.

Because of these mixed findings, the current study aims at reexamining the effect of Child Protective Services. Although prior researchers do touch upon this research question, we lack answers to some fundamental questions: If Child Protective Services do have an impact on recurrence, what risk factors do they affect to reduce the risk of recurrence? Palusci and Llardi (2019) have attempted to build a relationship among child sexual abuse recurrence, its risk factors, and Child Protective Services. Using NCANDS data from 2010 to 2015, they examine the risk factors and the effect of services for child sexual abuse recurrence. Their study demonstrates that being a female, having family hearing and vision problems, having other child maltreatment and domestic violence increased the risk of child sexual abuse recurrence, while being younger, being Hispanic, and having a substance abuse problem were associated with less risk of recurrence. By analyzing the relationship between services and recurrence, they argue that most Child Protective Services do not decrease recurrence, except for substance abuse services. The results of their study are reasonable, considering the large sample they have used, longitudinal data they have constructed, and comprehensive variables used to measure the characteristics of victims and abusers.

However, several gaps are noticed. First of all, they only count substantiated incidents for both initial and second incidents. An incident is substantiated means sufficient evidence have been founded to prove an allegation of child sexual abuse occurred, while in an unsubstantiated incident, the evidence is not sufficient to support an allegation of child sexual abuse. However, previous studies suggest that the difference of risk factors between substantiated and unsubstantiated incidents are minimal (Drake, 1996; Drake et al., 2003; Wolock et al., 2001), and more than 10% of substantiated incidents reported at the second time are from the unsubstantiated incidents that were not disclosed at the first time (Way et al., 2001). The difference between recurrence of substantiated incidents and only reported incidents was also found to be insignificant because currently available administrative data fail to consider the reporting decisions made by victims and obscure the difference between reporting and substantiation (Jenkins et al., 2019). Unsubstantiated incidents, followed by substantiated incidents, can be regarded as an under-inclusion (Bae et al., 2007), which reflects the likelihood of underestimating the risk for abuse and leaving children in an adverse environment, increasing their vulnerability to subsequent victimization. Thus, in the current study, it is necessary to count unsubstantiated incidents followed by substantiated incidents as recurrence rather than ignoring them.

Furthermore, Palusci and Llardi (2019) examined only the first and second abuse incidents. In their study, recurrence is defined as the second confirmed child sexual abuse incident for the same child. However, as they claim, no more than one fourth of children or families were referred to any child protective services after their first confirmed child sexual abuse incident, which means that many victims received

no services after their initial victimization. In addition, it takes time for some services to address the needs of victims and their families. In the current study, not only the initial and second abuse incidents but also all sexual abuse incidents for the same child that happened during the data period will be described.

Lastly, they only examined the relationship among risk factors, child sexual abuse recurrence, and child protective services, but ignored the interaction between risk factors and child protective services. That is, child protective services may not necessarily reduce recurrence in a direct way, but they may reduce the risk of disadvantages and reduce the effect of risk factors. According to the exposure-reducing hypothesis, the services do have an impact on reducing victims' exposure to risk factors and disadvantaged situations, though the protective effects of services are not sufficient to offset the selection effect of data. Foster care services provide substitute care for children away from their parents and families. Children who are abused by the perpetrators in their households would be removed from their home and placed in the alternative residents, such as family foster care homes, group homes, or emergency shelters. They provide a way to reduce children's exposure to the offenders. In this study foster care services would be used to test exposure-reduce hypothesis and examine the interaction effect between services and risk factors on child sexual abuse recurrence.

Drawing from the ecological approach, risk factors on the ontogenic developmental level, the microsystem level, and the exosystem level are examined in the current study to determine the relationship between risk factors and child sexual abuse recurrence, as well as the moderation effect of Child Protective Services on this

relationship. In short, the purpose of this study is to: (1) reexamine the recurrence rates of child sexual abuse during the decade 2009 to 2018; (2) reexamine the risk factors of child sexual abuse recurrence, including child characteristics, abuser characteristics, and the relationship between the child and the abuser; (3) reexamine the effect of four subgroups of Child Protective Services on child sexual abuse recurrence by them alone and by the interaction with risk factors.

Hypotheses

The recurrence of child sexual abuse may be associated with certain negative factors which may increase a child's likelihood to experience sexual abuse repeatedly, and certain protective factors that can reduce the effect of negative factors. This study aims to examine whether child protective services can reduce the recurrence directly and reduce the effect of risk factors. The main hypothesis is that children who receive child protective services will experience less sexual abuse recurrence than children who did not receive services. Based on the theoretical framework that states that factors on the ontogenic level (e.g., the characteristics of a child, the relationship between the child and the perpetrator), the microsystem level (e.g., family dysfunction, the characteristics of a caregiver) and the exosystem level (e.g., child protective services) are embedded within each other and have an impact on one another, it is assumed that child protective services can reduce the effect of risk factors on child sexual abuse recurrence. Thus,

Hypothesis 1: Overall, children who have received services will have lower likelihood of experiencing recurrence.

Dealing with the outcomes of child sexual abuse needs resources addressing different aspects of problems. More services provided for children means there are more opportunities to satisfy children's multiple needs at the same time. For example, providing housing, medical treatment, and mental treatment services at the same time may help children recover from trauma more rapidly because they obtain most of the resources that they need to get rid of risk. Thus,

Hypothesis 2: More services provided will be associated with lower risk of experiencing recurrence.

According to exposure-reducing hypothesis, the reduction of a child's exposure to either the offender or the abusive environment is able to reduce the risk of victimization. Child protective services may play the roles as guardians, preventing perpetrators from contacting children. Based on this assumption, foster care services are used to examine the interaction effect between services and risk factors on child sexual abuse recurrence. It is hypothesized that foster care services can reduce risk of recurrence if the perpetrators were children's caregivers, because they can remove the children from their households, prevent their abusive caregivers from contacting them again, and find children a new guardianship, which reduces their exposure to the offenders.

Hypothesis 3: Foster care services may reduce risk of recurrence if the perpetrators were children's caregivers.

Data and Methods

Dataset

The data used in this study are reconstructed using the National Child Abuse and Neglect Data System (NCANDS) Child File data sets from 2009 to 2018. The NCANDS data are federally-sponsored annual national data, submitted voluntarily by the 50 states, the District of Columbia and the Commonwealth of Puerto Rico each fiscal year (i.e., from October 1 to September 30 next year). Each state submits case-level data and agency-level data each year. After data are received by the Children's Bureau, the NCANDS Technical team validates and reviews the data, and provides feedback about the quality of the data. When completing the final submission, the state files are sent as a package to the National Data Archive on Child Abuse and Neglect for public distribution.

Case-level data are called the Child File in NCANDS data, which are composed of child-specific records for each report of alleged child abuse and neglect that received a CPS response, including information about the characteristics of the report, the demographics of child victim, the characteristics of the caregiver and the offender, and the types of services (or no services) provided to the child and the child's family as a result of the investigation or assessment. Agency-level data, which are called the Agency File, are supplements to the Child File, containing information that is not reportable in the Child File, such as caseload and workforce data (National Data Archive on Child Abuse and Neglect, 2018). Because the current study mainly focuses on the individual-level child's experience of sexual abuse recurrence, only NCANDS Child File will be used.

In this study, 10 years of data from the NCANDS Child File from 2009 to 2018 were used. The same child was identified by state and child identification number (unique ID within a state for each child in the report). Child demographics were examined to make sure the consistency of the records, and duplicative reports of the same child on the same day were dropped from the data set.

It is worth mentioning that "recurrence" rather than "revictimization" is used in the current study, because this study uses administrative data, which only contain the incidents that have been reported to a certain institution, and thus these incidents cannot represent the full extent of child sexual abuse revictimization in the U.S. Consequently, "recurrence" is used to represent how many times a child appeared in the administrative data. The administrative data capture a key part of the picture because government interventions only occur when such incidents are reported to officials, but we should note that the real "revictimization" is more prevalent than what is officially reported. This is a common limitation of administrative data use, and it also suggests that the results of the current study should be interpreted with caution.

The potential selection bias of NCANDS data should also be noted. Because NCANDS data only includes child abuse incidents that received a CPS response, which were severer in nature. Though in some incidents evidence was not enough to prove the occurrence of an actual abuse, the intervention of CPS has made them different from those which did not receive a CPS response. In other words, no documented services were assigned to the abused children does not mean there is no intervention. If the protective effects of intervention were not big enough to

counteract the detrimental effects of child sexual abuse, we would see more recurrence. However, it is possible that the increase in recurrence does not indicate a negative effect of child protective services, instead, it suggests a selection effect. Those children who were severely abused were more likely to receive services, and were also more likely to be abused repeatedly. The increase in recurrence is not due to services; it is because CPS capture children who are at the greatest risk of experiencing recurrence, but are not able to provide enough intervention to decrease their risk. In this study, the characteristics of children who experienced recurrence, their caregivers, and their families are compared to children who were only sexually victimized once to examine if their likelihood of receiving services were different at their initial incidents.

Sample

The NCANDS Child File data from 2009 to 2018 were used to construct a longitudinal data. There are two circumstances that records may not be counted as child sexual abuse recurrence: (1) for children who experienced a single type of maltreatment in single records, the incidents were non-sexual abuse; (2) for children who experienced more than one type of maltreatment in their single records, multi-type maltreatment did not include sexual abuse. For each child in the dataset, all subsequent records of sexual abuse following the initial incidents were matched to the initial incidents by state and children identification number. Intervals between the initial incident and the second incident for the same child were computed by

subtracting two report dates. If a child experienced more than two incidents, the procedure of calculating intervals is the same for other incidents.

It should be noted that there is a limitation of linking records because the 2009 data for the state of North Dakota, the 2009-2011 data for the state of Oregon and the 2016 data for the island of Puerto Rico were missing, the records from these states and territory were excluded from the dataset (62,133 victims were excluded). Besides, the records in which the victims were older than eighteen years old were also removed from the dataset (4,773 victims were removed). Lastly, the overall child maltreatment and neglect incidents, as well as child sexual abuse incidents only reveal the number of incidents that have been reported to CPS, regardless of having been substantiated or not. The sample size is 22,327,330 in this data.

Variables

Dependent variables

The dependent variable in this study is recurrence (yes/no). The data shows that most of the second incident occurred in two years after the initial case. Thus, the initial incidents may have taken place in one of the years from 2009 through 2018, and the subsequent incidents which took place within two years after the initial incidents occurred are counted and recoded as recurrence. Two circumstances are considered as recurrence: (1) initial substantiated incident with subsequent substantiated incidents; and (2) initial unsubstantiated incident with subsequent substantiated incidents. Counting unsubstantiated incidents followed by substantiated incidents is to avoid under-inclusion of the initial report. The duration between two

incidents and the number of recurrent incidents following the initial incident are also described in my study.

Independent variables

Several variables are used to examine the association among risk factors, Child Protective Services, and child sexual abuse recurrence. According to Belsky's (1980) ecological model, factors related to child sexual abuse recurrence can be considered on three levels. Firstly, risk factors on the ontogenic development level, which contains individual characteristics that influence the likelihood of experiencing child sexual abuse recurrence, are measured by *the characteristics of the child victim* and *the relationship between the victim and perpetrator*. *The characteristics of the child victim* include children's age (dummy variables for each age), female (1"yes", 0"no"), race (dummy variables for White, Black, Asian, American Indian or Alaska Native, Hawaiian or other pacific islander), Hispanic (1"yes", 0"no"), having alcohol or drug abuse (1"yes", 0"no"), disability (1"yes", 0"no") or behavior problems (1"yes", 0"no") mentioned in prior studies (e.g., Fluke et al., 1999; Bae et al., 2007; Boney-McCoy & Finkelhor, 1995). *The relationship between the child victim and the perpetrator* is measured by four dummy variables: whether the perpetrator was the victim's biological parent (1"yes", 0 "no"), step parent (1"yes", 0"no"), or adoptive parent (1"yes", 0"no") and whether the perpetrator was the victim's caregiver (1"yes", 0 "no")

Secondly, the microsystem-level factors provide an immediate context for a child sexual abuse to occur and repeat. Familial factors, including domestic violence

(1“yes”, 0“no”), inadequate housing (1“yes”, 0“no”), financial problems (1“yes”, 0“no”), and public assistance (1“yes”, 0“no”) are measured by dummy variables. Family structure is also found to be correlated with child sexual abuse (Shah et al., 1996). In this study, family structure (dummy variables for two-parent family, female-headed single-parent family, male-headed single-parent family, non-parent family). *The characteristics of the offender* are captured by the primary offender’s age, male (1“yes”, 0“no”), and race/ethnicity (dummy variables for White, Black, Asian, American Indian or Alaska Native, Hawaiian or other pacific islander, or other race). The number of offenders and whether the primary offender appeared in the previous records are controlled. Besides, *the characteristics of the caregiver* such as the caregiver’s alcohol or drug abuse (1“yes”, 0“no”) and disabilities (1“yes”, 0“no”) are of interest.

Having received services or not is represented by a dummy variable (1 “yes”, 0 “no”). The NCANDS data capture up to twenty-nine types of services provided for a child or a child’s family, which are directly related to the CPS responses and delivered within ninety days after the disposition date of incidents. Having received any of these services would be coded as 1 for the dummy variable. The number of services a child has received is calculated as a continuous variable. An interaction term is generated to show the interaction between foster care services and the relationship between victims and offenders (when offenders were children’s caregivers).

Lastly, the submission years of data were controlled to avoid the contextual effect such as the change of policies in a specific year. And for children who reported

multiple forms of maltreatment in a single record, the type of maltreatment other than sexual abuse and the number of types is controlled. Multiple forms of maltreatment may increase the severity of abuse, which may influence the risk of recurrence (Papalia et al., 2020).

Table 1. Variables of Interest

Variable	No.	%	Min	Max
Recurrence	227,700	1.02%	0	1
Submission year			2009	2018
Children's characteristics				
Age	9.2 (Mean)	4.8 (SD)	0	18
Female	1,768,637	68.76%	0	1
White	1,579,362	69.30%	0	1
Black	526,371	23.10%	0	1
Asian	27,557	1.21%	0	1
American Indian or Alaska Native	37,535	1.65%	0	1
Hawaiian or Other Pacific Islander	8,669	0.38%	0	1
Other race	99,536	4.37%	0	1
Hispanic	612,408	26.80%	0	1
Alcohol/drug use	8,176	0.56%	0	1
Disabilities	36,640	2.38%	0	1
Behavior problems	67,213	4.80%	0	1
Caregiver's characteristics				
Alcohol/drug use	30,592	2.09%	0	1
Disabilities	12,497	0.90%	0	1
Family's characteristics				
Two-parent family	341,235	22.24%	0	1
Female-headed single-parent family	445,148	29.01%	0	1
Male-headed single-parent family	79,292	5.17%	0	1
Domestic violence	101,696	3.93%	0	1
Inadequate housing	112,778	4.36%	0	1
Financial problems	170,261	6.58%	0	1
Public assistance	262,964	10.17%	0	1

Table 1. (Continued)

Variables of Interest

Variable	No.	%	Min	Max
Offender's characteristics				
Age	34.77 (Mean)	13.72 (SD)	6	75
Male	483,355	79.80%	0	1
White	369,524	67.72%	0	1
Black	105,176	19.27%	0	1
Asian	4,731	0.87%	0	1
American Indian or Alaska Native	6,211	1.14%	0	1
Hawaiian or Other Pacific Islander	1,881	0.34%	0	1
Other race	58,155	10.66%	0	1
Hispanic	132,803	25.57%	0	1
Prior offense	126,507	23.16%	0	1
The number of offender(s)	1.3 (Mean)	2.6 (SD)	0	15
The relationship between victims and offenders				
Biological parent	178,888	76.15%	0	1
Step parent	41,613	17.17%	0	1
Adoptive parent	4,503	1.92%	0	1
Caregiver	361,061	13.96%	0	1
Other maltreatment				
Physical abuse	210,579	0.94%	0	1
Neglect	809,778	3.63%	0	1
Emotional maltreatment	75,791	0.34%	0	1
Child Protective Services				
Received services	637,460	27.65%	0	1
The number of services a child received	0.6 (Mean)	1.3 (SD)	0	21

Data Analysis

Using Stata/SE software, Version 16.0, data analysis is proceeded in two steps. First of all, the overall child sexual abuse rates, recurrence rates, the duration between two sexual abuse incidents, and the number of incidents reported by the same child are calculated to explore if they are different across years, child protective services, children characteristics, caregiver characteristics, familial factors, offender characteristics, and the relationship between children and offenders. The overall child sexual abuse rates represent the number of children who experienced child sexual abuse per 100,000 children in the United States each year.

$$Child\ sexual\ abuse\ rate = \frac{The\ number\ of\ child\ sexual\ abuse\ victims}{The\ number\ of\ children\ in\ the\ United\ States} \times 100{,}000$$

The recurrence rates represent the proportion of children who appeared in the data the second time among all children who experienced child sexual abuse. They are also multiplied by 100,000 to avoid decimal points.

$$Recurrence\ rates = \frac{The\ number\ of\ children\ who\ reported\ more\ than\ once}{The\ number\ of\ children\ who\ reported\ child\ sexual\ abuse} \times 100{,}000$$

The duration between two sexual abuse incidents is calculated in months by the report date of the subsequent incident subtract the report date of the previous incident. As to the number of incidents, children who experienced more than six incidents take up less than 0.01% of all children who experienced child sexual abuse recurrence, in

order to reduce the impact of outliers, I only counted up to six incidents that appeared in the data for each child.

The children who experienced sexual abuse only once are compared to the children who experienced sexual abuse more than once to examine if they are different in risk factors and the services they received.

The next step is to examine the relationship among risk factors, recurrence, and child protective services using logistic regression and test the hypotheses mentioned above. And then the interaction term of caregivers as perpetrators and foster care services will be added to the model to examine if it has an impact on recurrence. Multicollinearity is examined to make sure there is no high correlation between independent variables.

Results

Descriptive Statistics

Overall Child Sexual Abuse and Recurrence 2009-2018

Based on the census data and NCANDS data, the child sexual abuse rate was 7,074 per 100,000 in average, which kept going down from 2009 through 2017, and showed an increase in 2018 (Figure 2). The recurrence rates represent the proportion of recurrent victims who experienced child sexual abuse repeatedly among all child sexual abuse victims. If a child was counted as a recurrent victim in 2009, it means that his/her initial abuse occurred in 2009, and another incident took place within two years after 2009 (2009-2011). Figure 3 only shows the rates in 2009-2016, because time windows for 2017 and 2018 are limited in this data. The total number of

recurrent victims is 22,770 (1,020 per 100,000) from 2009 through 2018. As Figure 3 shows a lowest point in 2011; the recurrence rates decreased from 2009 to 2011 and then increased until 2013. From 2013 to 2016, the recurrence rates remained steady.

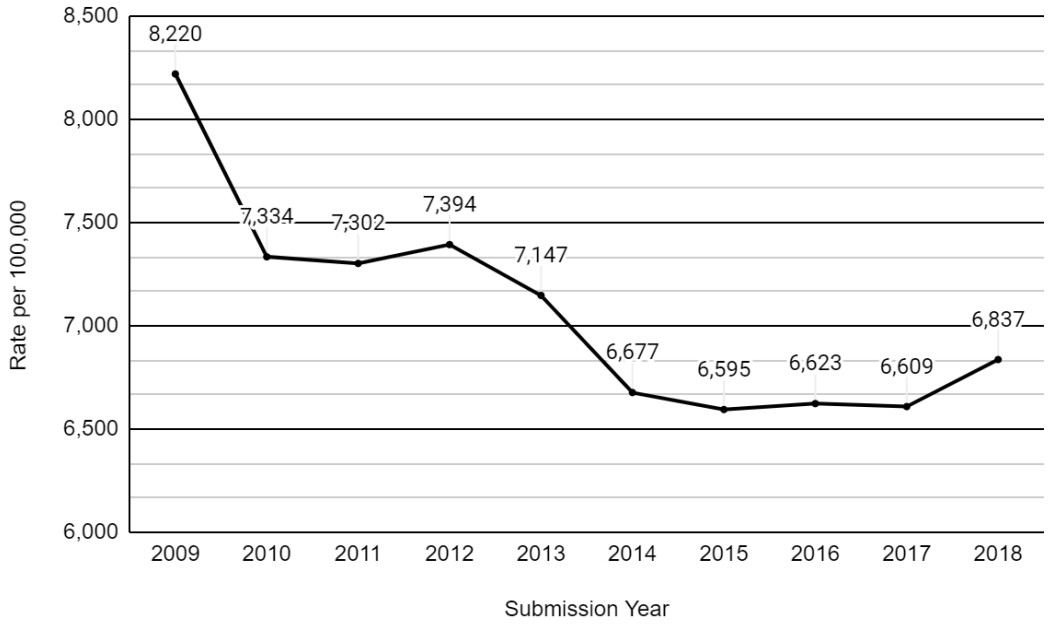

Figure 2. Child Sexual Abuse Rates 2009-2018

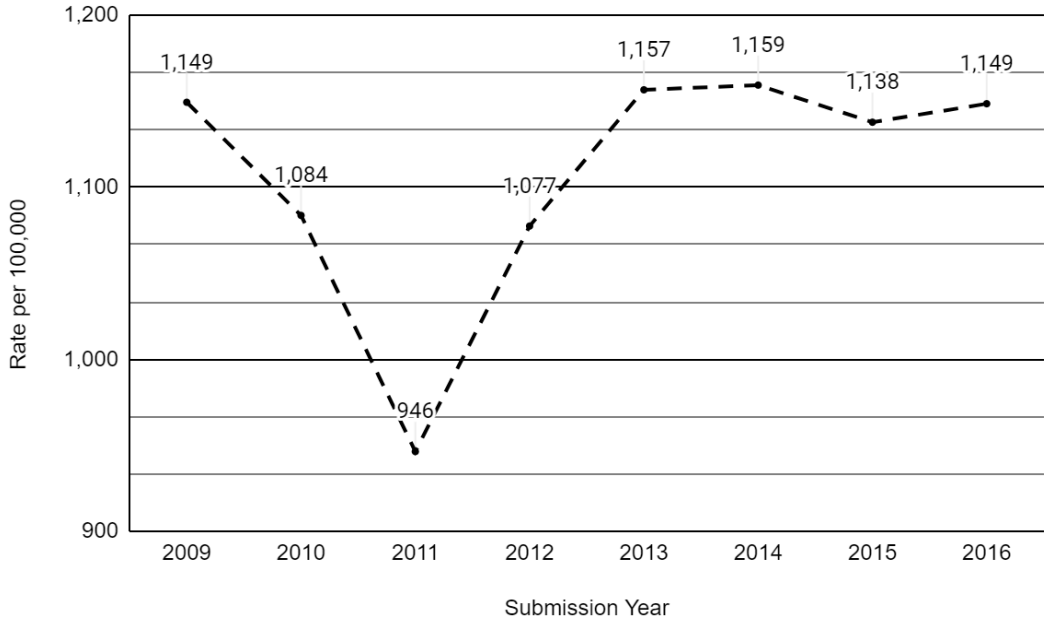

Figure 3. Child Sexual Abuse Recurrence Rates 2009-2016

The Count of Repeat and Average Duration

Among the victims who experienced child sexual abuse during the period 2009-2018, there were 1,020 per 100,000 victims reported the recurrence of sexual abuse. Amid the recurrent victims, there were 53,793 victims reported their second victimization after their initial incidents, and 4,926 victims reported at least three subsequent incidents from 2009 to 2018. The average duration between the initial reports and the second reports is 17.1 months, and it took another 13.5 months on average for them to report the third incidents. As the number of incidents that the victims reported increased, the duration between two recurrences decreased (Figure 4).

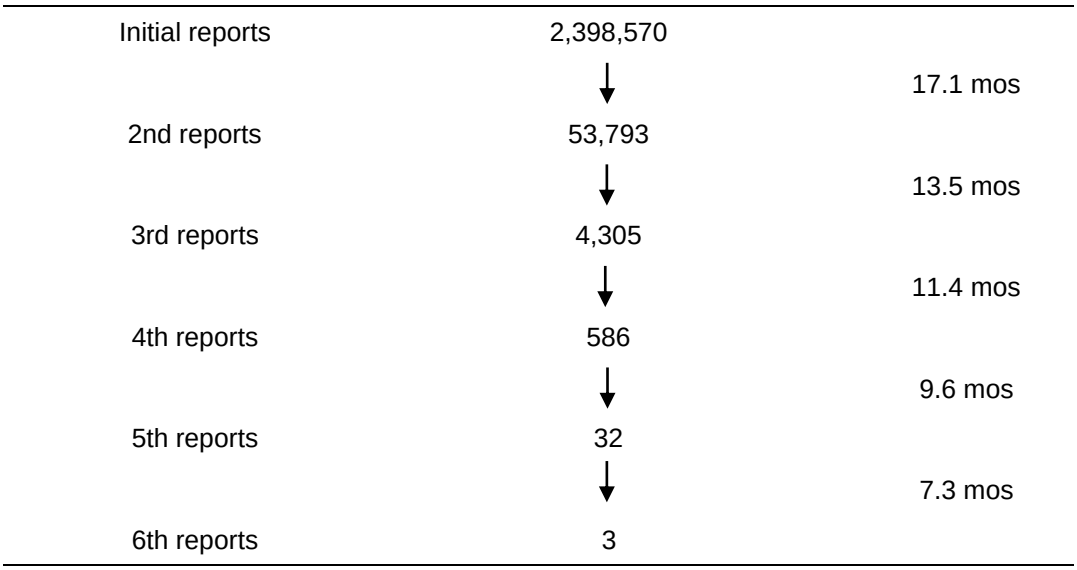

Figure 4. The Count of Recurrent Incidents and Average Duration Between Two Incidents

The Characteristics of Non-recurrent Victim vs. Recurrent Victim

Age

The mean age at the non-recurrent victim's initial incident is significantly different from the recurrent victim ($M_{non} = 9.17; M_{re} = 10.49; t = -62.32; p < 0.001$). Besides, they follow the different patterns of age curve. There are two peaks of risk for both non-recurrent victims and recurrent victims, however, for those non-recurrent victims, children at age 4 and age 15 have were more likely to experience child sexual abuse than others, while children around age 14 were at the highest risk of experiencing child sexual abuse recurrence. In general, children were more likely to experience recurrence as they got older before age 5, but the risk slightly decreased after age 5 until age 11. After age 11, the risk of experiencing recurrence rapidly increased and reached the highest point at age 14, but it decreased sharply as age increased after age 15 (Figure 5).

Figure 5. Age at the Initial Incident (Non-recurrent vs. Recurrent Victim)

Gender, Race/ethnicity, Substance Use, Disabilities, and Behavior Problems

As Table 2 shows, there is a statistically significant difference between non-recurrent child sexual abuse victims and recurrent child sexual abuse victims in the distribution of gender, race/ethnicity, alcohol/drug use, and behavior problems. Girls reported both sexual abuse and recurrence more than boys, and the gender difference is much larger among recurrent victims than non-recurrent victims. White children reported the greatest amount of non-recurrent sexual abuse and recurrence, which is followed by Black. Racial groups other than Black and White merely take up a small part of child sexual abuse and recurrence. Compared to their likelihood of being sexually abused, White children were much more likely to experience sexual abuse recurrence than non-White children. While Black and Asian children were much less likely to experience recurrence. Hispanic children reported both non-recurrent sexual abuse and recurrence much more than non-Hispanic children. Children who used

alcohol or drugs make up only a small fraction of all children who experienced recurrence and who did not, and there was no significant difference of likelihood of experiencing recurrence between these two groups. Just as using alcohol or drugs, children who had disabilities constitute a minor part of all non-recurrent victims and recurrent victims. Having disabilities were more common among non-recurrent children, while showing behavior problems were more common among recurrent children.

Table 2. The Characteristics of Victims (Non-recurrent vs. Recurrent)

	Non-recurrent victim	Recurrent victim	t-test
Female	1,725,774 (68.48%)	42,863 (82.62%)	-68.86**
White	1,544,090 (69.2%)	35,272 (73.87%)	-21.90**
Black	516,328 (23.14%)	10,043 (21.03%)	10.81**
Asian	27,148 (1.22%)	409 (0.86%)	7.12***
Amer Indian or Alaska Native	36,790 (1.65%)	745 (1.56%)	1.50
Hawaiian or other pacific islander	8,477 (0.38%)	192 (0.40%)	-0.78
Hispanic	603,709 (26.97%)	8,699 (18.77%)	39.46**
Alcohol/drug use	8,006 (0.56%)	170 (0.50%)	1.30
Disabilities	36,367 (2.41%)	273 (0.79%)	19.62**
Behavior problems	64,399 (4.69%)	2,814 (9.37%)	-37.52**

Note: ***p<=0.001, **p<=0.01, *p<=0.05

The Characteristics of Caregiver and Family in Non-recurrent vs. Recurrent Incidents

There is no statistically significant difference between children who experienced only child sexual abuse and who experienced recurrence in their caregivers' alcohol or drugs using and disabilities. Children living single mothers reported the largest number of both non-recurrent sexual abuse (29.01%) and recurrent sexual abuse (28.91%). It is followed by children living with two-parent families, which constitute 22.14% of victims in non-recurrent sexual abuse and 26.20% in recurrent sexual abuse. Children living with single fathers take up the least proportion in both non-recurrent sexual abuse (5.17%) and recurrent sexual abuse (5.17%). Among all family-related problems, having received public assistance is the most common problem in both non-recurrent incidents (10.19%) and recurrent incidents (8.97%). The distribution of children whose families have encountered domestic violence, inadequate housing, financial problems or having received public assistance is significantly different between non-recurrent incidents and recurrent incidents (Table 3).

Table 3. The Characteristics of Caregivers and Families
(Non-recurrence vs. Recurrence)

	Non-recurrent case	Recurrent case	t-test
Alcohol/drug use	29,906 (2.09%)	686 (2.03%)	0.75
Disabilities	12,231 (0.90%)	266 (0.84%)	1.19
Two-parents family	332,056 (22.14%)	9,179 (26.20%)	-18.04***
Female-headed single-parent family	435,020 (29.01%)	10,128 (28.91%)	0.42
Male-headed single-parent family	77,481 (5.17%)	1,811 (5.17%)	-0.02
Domestic violence	99,158 (3.91%)	2,538 (4.88%)	-11.26***
Inadquate housing	111,182 (4.39%)	1,596 (3.07%)	14.56***
Financial problems	167,333 (6.60%)	2,928 (5.63%)	8.83***
Public assistance	258,299 (10.19%)	4,665 (8.97%)	9.10***

Note: ***p<=0.001, **p<=0.01, *p<=0.05

The Characteristics of Offender in Non-recurrent vs. Recurrent Incidents

Age

According to Figure 6, the offenders' age curve in non-recurrent incidents and recurrent incidents almost follow the same pattern. In this dataset, the minimum age of offender is 6 years old, and the maximum age is 75 years old. At age eighteen the curves reach their highest point, representing 71,947 offenders in non-recurrent incidents (12.88%) and 4,872 in recurrent incidents (15.37%). The rates steadily increased after age twenty-one until age thirty-four, and then kept decreasing until a sharp increase occurred at age seventy. The mean age of offender is significantly distinctive between non-recurrent incidents and recurrent incidents ($M_{non} = 34.81; M_{re} = 34.07; t = 9.31; p < 0.001$).

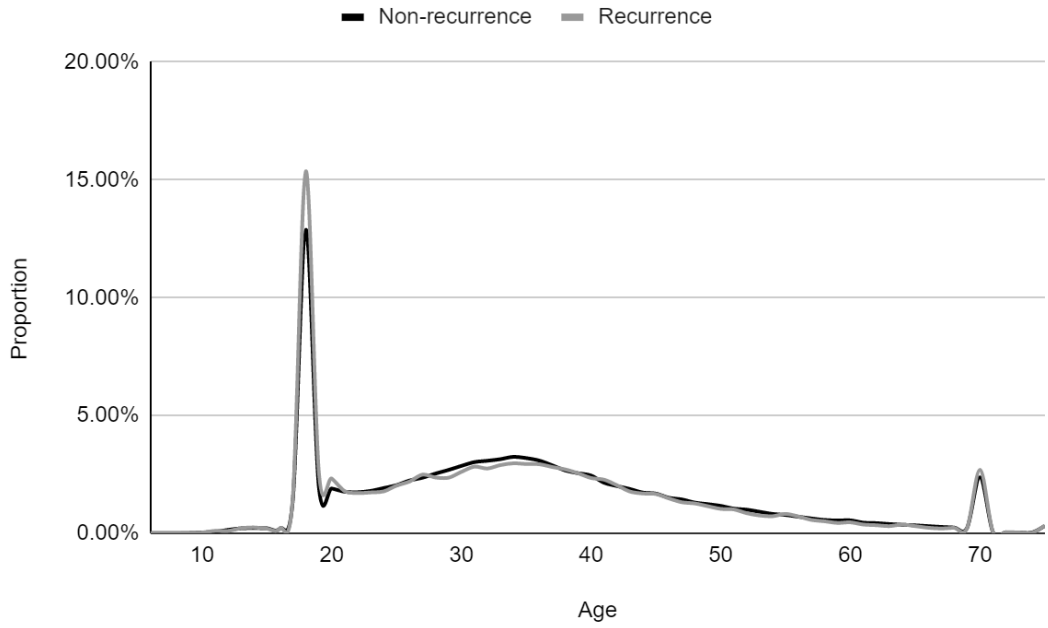

Figure 6. Age of The Primary Offender (Non-recurrence vs. Recurrence)

Gender, Race/ethnicity, The Relationship with the Victim

Male offenders appeared more frequently than female offenders in both non-recurrent incidents and recurrent incidents, but the distribution of gender is significantly different between two groups. White offenders represent a substantial part of all offenders in both non-recurrent incidents (67.40%) and recurrent incidents (73.39%), which are followed by Black. The distribution of race is different between recurrent incidents than non-recurrent incidents for White, Asian and Hawaiian or other pacific islander. Hispanic offenders appeared more in the non-recurrent incidents (25.93%) than recurrent incidents (19.04%). The greatest number of child sexual abuse (76.12%) and repeat abuse (76.67%) were committed by children's

biological parent. The composing proportion of offenders in their relationship with the victims is significantly different between non-recurrent incidents and recurrent incidents for step parent and adoptive parent. It appears that children's caregivers accounted for a larger part in recurrent incidents than those sexual abuse incidents that only occurred once (Table 4).

Table 4. The Characteristics of Offenders
(Non-recurrence vs. Recurrence)

	Non-recurrent case	Recurrent case	t-test
Male	456,199 (79.61%)	27,156 (82.99%)	-14.78***
White	348,542 (67.40%)	20,982 (73.39%)	-21.09***
Black	99,601 (19.26%)	5,575 (19.5%)	-1.00
Asian	4,535 (0.88%)	196 (0.69%)	3.40***
Amer Indian or Alaska Native	5,883 (1.14%)	328 (1.15%)	-0.15
Hawaiian or other pacific islander	1,807 (0.35%)	74 (0.26%)	2.54**
Hispanic	127,583 (25.93%)	5,220 (19.04%)	25.46***
Biological parent	169,921 (76.12%)	8,967 (76.67%)	-1.35
Step parent	39,654 (17.76%)	1,959 (16.75%)	2.80**
Adoptive parent	4,207 (1.88%)	296 (2.53%)	-4.97***
Caregiver	343,925 (13.57%)	17,136 (32.96%)	-1.3e+02***

Note: ***p<=0.001, **p<=0.01, *p<=0.05

Child Protective Services Received in Non-recurrent vs. Recurrent Incidents

Compared to non-recurrent incidents, in which 27.46% of victims received child protective services, 36.64% of victims in the recurrent incidents received child protective services for their initial child sexual abuse ($M_{non} = 0.27; M_{re} = 0.37; t = -44.46; p < 0.001$). However, it was least common for victims in the recurrent

incidents to receive child protective services after their initial incident occurrence (Figure 7).

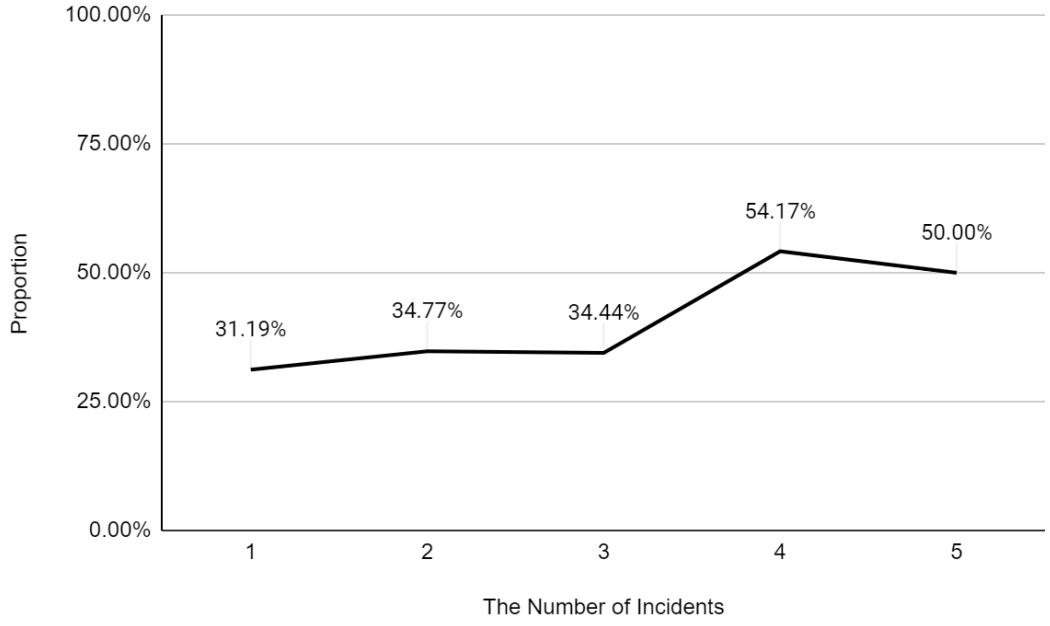

Figure 7. The Proportion of Victims Receiving Services after The Occurrence of Incidents (Up to Five Incidents)

Overall recurrent victims received more types of services for their initial incidents, as 10.65% of victims in the non-recurrent incidents received at least two types of services, while 16.08% ($M_{non} = 0.54; M_{re} = 0.74; t = -22.01; p < 0.001$) of victims in the recurrent incidents received at least two types of services (Table 5).

Table 5. The Number of Services Received after The Initial Incidents

Services Count	Non-recurrent Victims	Recurrent Victims
0	73.36%	68.50%
1	15.99%	15.42%
2	4.05%	5.78%
3	2.54%	3.58%
4	1.66%	2.71%
5	0.93%	1.59%

Among children who received child protective services after their initial incidents, the likelihood of receiving distinctive types of services was significantly different between children in the non-recurrent incidents and recurrent incidents. Victims in recurrent incidents were more likely to receive all types of services than victims in non-recurrent incidents in general. The largest difference appeared in juvenile court petition services, foster care services, and court-appointed representative services. The proportion of victims receiving case management services was highest in both non-recurrent incidents (19.99%) and recurrent incidents (22.19%), which was followed by juvenile court petition services (6.34%), information and referral services (5.79%), and foster care services (5.48%) in the non-recurrent incidents, as well as juvenile court petition (10.71%), foster care services (9.19%), and counseling services (8.29%) in the recurrent incidents. Victims in the non-recurrent incidents were the least likely to receive special services-juvenile delinquent (0.14%), independent and transitional living services (0.17%), and family planning services (0.21%), while family planning services (0.26%), special services-

juvenile delinquent (0.33%), and employment services (0.39%) were the least likely to be delivered to victims in the recurrent incidents (Table 6).

Table 6. Child Protective Services Received after The Initial Incidents

Services	Non-recurrent	Recurrent	t-test
Family Support Services	64,422 (4.53%)	1,216 (8.06%)	-4.24***
Family Preservation Services	79,190 (4.71%)	1,091 (6.82%)	21.11***
Foster Care Services	107,050 (5.48%)	1,831 (9.19%)	14.09***
Juvenile Court Petition	93,749 (6.34%)	1,721 (10.71%)	15,03***
Court-Appointed Representative	54,482 (3.87%)	744 (5.76%)	27.40***
Adoption Services	13,711 (0.84%)	239 (1.62%)	32.56***
Case Management Services	360,084 (19.99%)	3,848 (22.19%)	16.00***
Counseling Services	77,089 (4.72%)	1,211 (8.29%)	28.13***
Daycare Services-Child	18,325 (1.17%)	186 (1.32%)	28.49***
Educational and Training Services	12,014 (0.77%)	250 (1.86%)	24.88***
Employment Services	3,437 (0.23%)	51 (0.39%)	26.94***
Family Planning Services	2,419 (0.21%)	30 (0.26%)	-15.95***
Health-Related and Home Health Services	22,343 (1.39%)	429 (3.02%)	27.27***
Home-Based Services	15,201 (0.96%)	247 (1.75%)	28.01***
Housing Services	8,332 (0.53%)	126 (0.9%)	18.54***
Independent and Transitional Living Services	2,755 (0.17%)	51 (0.35%)	29.45***
Information and Referral Services	86,186 (5.79%)	850 (6.55%)	18.97***
Legal Services	5,827 (0.38%)	69 (0.51%)	28.42***
Mental Health Services	40,239 (2.49%)	778 (5.41%)	27.23***
Pregnancy and Parenting Services for Young Parents	10,245 (0.79%)	111 (0.83%)	-6.22***
Respite Care Services	6,108 (0.42%)	96 (0.75%)	29.77***
Special Services-Disabled	10,415 (0.70%)	56 (0.44%)	24.54***
Special Services-Juvenile Delinquent	1,951 (0.14%)	38 (0.33%)	25.85***
Substance Abuse Services	22,454 (1.44%)	268 (1.98%)	28.32***
Transportation Services	12,892 (0.80%)	219 (1.54%)	23.07***
Other Services	55,130 (3.43%)	830 (5.78%)	23,18***

Note: ***p<=0.001, **p<=0.01, *p<=0.05

Child Protective Services Received and The Characteristics of Children, Caregiver, Family and Offender

As Table 7 shows, the likelihood of receiving services was different in terms of characteristics of children, caregiver, family and offender. The mean age of sexually abused children was larger in the incidents which received services than those who did not receive services. It was more common for abused girls to receive services. White and Black children were less likely to receive services, while Asian children, American Indian or Alaska Native, and Hawaiian or other pacific islander were more likely to receive services. Hispanic children were significantly more likely to receive services than non-Hispanic children. Children who have alcohol or drug use problems, disabilities, and behavior problems were more likely to receive service. Similarly, the incidents where children's caregivers have alcohol or drug use problems and disabilities were more likely to received services. As to family structure, two-parent families and male-headed single-parent families were less likely to receive services, while female-headed single-parent families were more likely to receive services. The families who have domestic violence and public assistance were more likely to receive services, while those who experience inadequate housing and financial problems were less likely to receive services. The incidents which involve younger, male, White and Black offenders were less likely to receive services. On the contrary, the incidents involving Asian, American Indian or Alaska Native, Hawaiian or other pacific islander, and Hispanic offenders were more likely to receive services. Children were more likely to receive services if the offenders were their biological parents or adoptive parents, while they were less likely to receive services if the

offenders were their step parents. Lastly, the incidents in which children's caregivers were offenders were more likely to receive services.

Overall, the findings in Table 7 suggest that incidents involving children, caregiver, family, and offender with above characteristics may be regarded as more serious and need the intervention of services to prevent recurrence. Because services were not provided to the victims and their families randomly, this has implications for the study that I will discuss in the Discussion Section.

Table 7. CPS Received and The Characteristics of Children, Caregiver, Family, and Offender

	Received Services	Not Received Services	t-test
Children			
Age	9.34 (Mean)	9.15 (Mean)	-26.57***
Female	441,079 (69.38%)	1,137,124 (68.55%)	-12.17***
White	347,668 (67.62%)	1,063,077 (69.89%)	30.44***
Black	116,756 (22.71%)	354,313 (23.29%)	8.57***
Asian	8,358 (1.63%)	16,586 (1.09%)	-30.17***
American Indian or Alaska Native	13,275 (2.58%)	20,707 (1.36%)	-59.11***
Hawaiian or other pacific islander	2,958 (0.58%)	4,852 (0.32%)	-25.71***
Hispanic	168,494 (30.25%)	382,848 (25.83%)	-63.33***
Alcohol/drug use	5,321 (1.64%)	1,869 (0.19%)	-97.82***
Disabilities	27,267 (7.53%)	5,095 (0.50%)	-2.5e+02***
Behavior problems	32,276 (10.70%)	29,237 (3.05%)	-1.7e+02***
Caregiver			
Alcohol/drug use	10,325 (3.42%)	17,298 (1.70%)	-57.97***
Disabilities	4,640 (1.78%)	6,409 (0.65%)	-54.41***
Family			
Two-parents	97,968 (21.99%)	243,267 (22.34%)	4.70***
Female-headed single-parent	142,288 (31.94%)	302,860 (27.81%)	-51.20***
Male-headed single-parent	22,352 (5.02%)	56,939 (5.23%)	5.36***
Domestic violence	32,783 (5.14%)	56,139 (3.37%)	-62.74***
Inadquate housing	20,273 (3.18%)	72,808 (4.36%)	40.88***
Financial problems	34,563 (5.42%)	111,162 (6.66%)	34.67***
Public assistance	74,028 (11.61%)	156,150 (9.36%)	-51.05***

Note: ***p<=0.001, **p<=0.01, *p<=0.05

Table 7. (Continued)

CPS Received and The Characteristics of Children, Caregiver, Family, and Offender

	Received Services	Not Received Services	t-test
Offender			
Age	34.57 (Mean)	34.95 (Mean)	9.76***
Male	151,097 (71.56%)	281,094 (85.85%)	130.62***
White	124,663 (64.83%)	205,368 (69.85%)	36.71***
Black	32,965 (17.14%)	61,368 (20.87%)	32.19***
Asian	1,956 (1.02%)	2,272 (0.77%)	-8.98***
American Indian or Alaska Native	3,009 (1.56%)	2,610 (0.89%)	-21.61***
Hawaiian or other pacific islander	944 (0.49%)	758 (0.26%)	-13.46***
Hispanic	48,775 (27.01%)	70,486 (24.99%)	-15.32***
Biological parent	82,840 (79.94%)	74,919 (72.07%)	-42.16***
Step parent	13,993 (13.50%)	23,038 (22.16%)	51.85***
Adoptive parent	2,566 (2.48%)	1,451 (1.40%)	-17.88***
Caregiver	115,255 (18.08%)	206,827 (12.4%)	-1.10E+02

Note: ***p<=0.001, **p<=0.01, *p<=0.05

Logistic Regressions

The Characteristics of Children

In the first model, the relationships between child sexual abuse recurrence and risk factors were examined. For children who experienced child sexual abuse, being female (β=0.290, $p<0.001$), using alcohol or drug (β=0.553, $p<0.01$), and having behavioral problems (β=0.268, $p<0.001$) significantly increased children's risk of experiencing recurrence. It is worth noting that after adding the submission year of child sexual abuse reports to the model, the significant relationship between

recurrence and child's age disappeared. Instead, the submission year of child sexual abuse reports was positively related to child sexual abuse recurrence ($\beta=0.025$, $p<0.001$). Compared to children at age 14, children from age 0 to 4, from age 8 to 11, age 16 and age 17 were significantly less likely to experience recurrence. Compared to White children, black children were less likely to be sexually abused again.

The Characteristics of Caregivers and Families

Caregiver's alcohol or drug use and disabilities didn't have a significant effect on children's revictimization. Living in a substandard, overcrowded, unsafe or homeless ($\beta=-0.204$, $p<0.01$) significantly decreased children's likelihood of experiencing recurrence. On the contrary, living in a household that was receiving public assistance ($\beta=0.184$, $p<0.001$) increased children's risk of experiencing recurrence. Moreover, living with a single mother ($\beta=0.208$, $p<0.001$) and single father ($\beta=0.205$, $p<0.01$) both increased their risk of experiencing recurrence, compared to two-parent families.

The Characteristics of Offenders

Children were less likely to experience recurrence if the offenders were older ($\beta=-0.006$, $p<0.001$). If the offenders committed offense previously, children's risk of experiencing recurrence largely increased ($\beta=0.395$, $p<0.001$). Besides, if there were more offenders involved in the incidents, children were more likely to experience recurrence ($\beta=0.224$, $p<0.001$). Lastly, if the offenders were children's caregivers, the possibility that children would experience recurrence decreased ($\beta=-0.071$, $p<0.05$).

Other Types of Maltreatment

For those children who experienced other types of child maltreatment other than sexual abuse, having reported physical abuse (β=-0.204, $p<0.001$), neglect (β=-0.126, $p<0.001$) and psychological/emotional maltreatment (β=-0.405, $p<0.01$) could all significantly reduce the risk of experiencing child sexual abuse recurrence.

Child Protective Services

In the second model, a dummy variable representing whether a child received services or not was added to the model. Compared to children who did not receive any services after they reported their victimization, children receiving services were more likely to be sexually abused again (β=0.026, $p<0.001$). The third model shows that more services a child received, more likely was the child to experience child sexual abuse recurrence (β=0.067, $p<0.001$).

The Interaction between Risk Factors and Child Protective Services

In the Fourth model, the interaction terms were added to the model. Foster care services are believed to be able to remove the abused children from their original households and place them in an alternative facility, which can reduce children's exposure to the offenders if the offenders were their caregivers and then reduce their likelihood to be revictimized. However, no significant effect was found between foster care and the circumstances that the caregivers were the offenders.

Table 8. Logistic Regressions

Predictor	Model 1 (Risk factors) β	SE	Model 2 (Risk factors + Services) β	SE	Model 3 (Risk factors + The count of services) β	SE	Model 4 (Risk factors + Foster care + Interaction term) β	SE
Submission year	0.025***	0.005	0.029***	0.005	0.025***	0.005	0.029***	0.005
Child's characteristics								
Age (14)								
0	-0.766***	0.195	-0.807***	0.196	-0.848***	0.196	-0.813***	0.195
1	-0.418*	0.163	-0.444**	0.163	-0.454**	0.163	-0.451**	0.163
2	-0.404**	0.130	-0.422**	0.130	-0.427**	0.130	-0.426**	0.130
3	-0.309**	0.091	-0.323***	0.091	-0.330***	0.091	-0.325***	0.091
4	-0.228**	0.074	-0.234**	0.074	-0.240**	0.074	-0.236**	0.074
5	-0.055	0.069	-0.060	0.069	-0.061	0.069	-0.061	0.069
6	-0.135	0.069	-0.138*	0.069	-0.142*	0.069	-0.140*	0.069
7	-0.106	0.068	-0.109	0.068	-0.114	0.068	-0.109	0.068
8	-0.144*	0.068	-0.144*	0.068	-0.151*	0.068	-0.144*	0.068
9	-0.166*	0.069	-0.169*	0.069	-0.172*	0.069	-0.167*	0.069
10	-0.160*	0.068	-0.160*	0.068	-0.162*	0.068	-0.160*	0.068
11	-0.314***	0.070	-0.314***	0.070	-0.318***	0.070	-0.315***	0.070
12	-0.031	0.061	-0.030	0.061	-0.035	0.061	-0.031	0.061
13	0.090	0.055	0.090	0.055	0.090	0.055	0.091	0.055
15	0.049	0.054	0.050	0.054	0.050	0.054	0.050	0.054
16	-0.180**	0.062	-0.180**	0.062	-0.181**	0.062	-0.181**	0.062
17	-0.374***	0.076	-0.374***	0.076	-0.371***	0.076	-0.374***	0.076
18	0.049	0.245	0.094	0.245	0.087	0.245	0.093	0.245

Note: 1. N=22,327,330 2. ***p<=0.001, **p<=0.01, *p<=0.05

Table 8. (Continued) Logistic Regressions

Predictor	Model 1 (Risk factors) β	SE	Model 2 (Risk factors + Services) β	SE	Model 3 (Risk factors + The count of services) β	SE	Model 4 (Risk factors + Foster care + Interaction term) β	SE
Female	0.290***	0.035	0.290***	0.035	0.290***	0.035	0.290***	0.035
Gender (White)								
Black	-0.122*	0.055	-0.121*	0.055	-0.130*	0.056	-0.124*	0.055
Asian	0.075	0.162	0.061	0.162	0.057	0.162	0.061	0.162
American Indian or Alaska Native	0.120	0.114	0.108*	0.114	0.074	0.114	0.102	0.114
Hawaiian or Other Pacific Islander	0.053	0.226	0.030	0.225	0.040	0.226	0.032	0.226
Others	-0.180	0.119	-0.180	0.120	-0.172	0.120	-0.175	0.120
Alcohol/drug use	0.553**	0.172	0.549**	0.172	0.543**	0.172	0.547**	0.172
Behavior problems	0.268***	0.039	0.223***	0.039	0.222***	0.039	0.219***	0.039
Caregiver's characteristics								
Alcohol/drug use	-0.136	0.106	-0.138	0.106	-0.154	0.106	-0.139	0.106
Disabilities	0.024	0.295	-0.009	0.295	-0.106	0.295	-0.032	0.295
Family's characteristics								
Domestic violence	-0.012	0.054	-0.024	0.054	-0.056	0.055	-0.024	0.054
Inadequate housing	-0.204**	0.078	-0.226**	0.078	-0.255**	0.078	-0.231**	0.078

Note: 1. N=22,327,330 2. ***p<=0.001, **p<=0.01, *p<=0.05

Table 8. (Continued) Logistic Regressions

Predictor	Model 1 (Risk factors) β	SE	Model 2 (Risk factors + Services) β	SE	Model 3 (Risk factors + The count of services) β	SE	Model 4 (Risk factors + Foster care + Interaction term) β	SE
Financial problems	0.065	0.055	0.047	0.055	0.016	0.055	0.041	0.055
Public assistance	0.184***	0.042	0.167***	0.042	0.154***	0.042	0.162***	0.042
Family structure (Two-parent)								
Female-headed single-parent family	0.208***	0.032	0.225***	0.032	0.217***	0.032	0.223***	0.032
Male-headed single-parent family	0.205**	0.060	0.215***	0.060	0.197**	0.060	0.208**	0.060
Others	0.081*	0.036	0.112**	0.036	0.084*	0.036	0.094*	0.037
Offender's characteristics								
Age	-0.006***	0.001	-0.006***	0.001	-0.007***	0.001	-0.006***	0.001
Male	0.067	0.041	0.089*	0.041	0.091*	0.041	0.090	0.041
Offender race (White)								
Black	-0.016	0.055	-0.014	0.055	-0.019	0.055	-0.016	0.055
Asian	-0.141	0.180	-0.137	0.180	-0.152	0.180	-0.139	0.180
American Indian or Alaska Native	-0.051	0.129	-0.057	0.129	-0.070	0.129	-0.057	0.129
Hawaiian or Other Pacific Islander	-0.517	0.270	-0.529	0.270	-0.513	0.270	-0.057	0.129
Other	-0.247*	0.098	-0.242	0.099	-0.240*	0.099	-0.245*	0.099

Note: 1. N=22,327,330 2. ***p<=0.001, **p<=0.01, *p<=0.05

Table 8. (Continued) Logistic Regressions

Predictor	Model 1 (Risk factors) β	SE	Model 2 (Risk factors + Services) β	SE	Model 3 (Risk factors + The count of services) β	SE	Model 4 (Risk factors + Foster care + Interaction term) β	SE
Hispanic	-0.076	0.053	-0.083	0.053	-0.075	0.053	-0.081	0.053
Prior offense	0.395***	0.029	0.385***	0.029	0.388***	0.029	0.383***	0.029
The number of offenders	0.224***	0.028	0.212***	0.028	0.209***	0.028	0.206***	0.028
The relationship between victim and offender								
Caregiver	-0.071*	0.030	-0.069*	0.030	-0.081**	0.030	-0.057	0.032
Other maltreatment								
Physical abuse	-0.204***	0.056	-0.226***	0.056	-0.222***	0.056	-0.229***	0.056
Neglect	-0.126***	0.038	-0.146***	0.039	-0.170***	0.039	-0.154***	0.039
Emotional maltreatment	-0.405**	0.088	-0.428***	0.088	-0.399***	0.088	-0.425***	0.088
Child protective services			0.026***	0.029	0.087*	0.036		
The number of services a child received					0.067***	0.008		
Foster care services							0.361***	0.067
Non-foster care services							0.183***	0.030
Interaction term								
Foster care services* caregiver							-0.124	0.082

Note: 1. N=22,327,330 2. ***p<=0.001, **p<=0.01, *p<=0.05

Discussion

The purpose of this study was to examine the relationship between child sexual abuse recurrence and risk factors (in terms of characteristics of children, caregiver, family and offender), the relationship between child sexual abuse recurrence and child protective services, as well as the interaction effect of child protective services on risk factors. Based on the ecological model (Belsky, 1980), it was assumed that children's caregivers, families, the offenders, and child protective services all had an impact on children's likelihood of being sexually abused again after they were victimized for the first time. The first hypothesis is that receiving services overall reduces children's likelihood of being victimized again. Some services are designed to help children recover from their traumatic experience, build reliable relationships with others, and get rid of risky lifestyle (e.g., unhealthy sex relationship); some services aim at removing children immediately from abusive environment and find them a caregiver that can protect them from being victimized again; and some services are provided to help caregiver be more capable of protecting their own children, such as drug abuse treatment. All these services can reduce children's possibilities of being sexually abused again by reducing their exposure to offenders or abusive environments. However, the result does not support the first hypothesis. On the contrary, children receiving services were found to be more likely to experience recurrence than those who didn't receive services. This finding is consistent with the

prior research stating that CPS services may increase the recurrence (DePanfilis & Zuravin, 2002).

The second hypothesis is that more services provided are related to less possibility of being revictimized. More services provide more resources for a child to recover from trauma and get rid of an abusive environment. Still, this hypothesis was not supported by the data. The results show another way that more services are associated with higher likelihood of revictimization. The last hypothesis is that foster care services can reduce children's risk of being revictimized if the offenders were their caregivers. However, no significant interaction effect was found between foster care services and the situation that the offenders were children's caregivers.

There are three possible explanations for these results. Firstly, the positive effect is not large enough to offset the "selection effect" of NCANDS data. The services may have actually reduced the recurrence of child sexual abuse, but those victims who received services and have been successfully protected from experiencing recurrence were not selected to be included in the data, because their incidents were considered as "less severe." If this was true, then NCANDS data only captured those incidents that were most serious and needed more efforts to deal with, over and over again, and failed to capture those incidents that were successfully addressed. That means, children receiving more services were not more likely to experience recurrence, but more likely to be selected and recorded in the data. More comprehensive data are needed to examine the effect of services on incidents that are regarded as "less severe." Secondly, services associated with higher possibility of recurrence may be due to "surveillance effect" (MacMillan et al., 2002), which means

the incidents in which children received services were more likely to be discovered by CPS, because they were more closely supervised. An opposite effect to "surveillance effect" is exposure-reduce (Dugan et al., 2003), which means the intervention of services can reduce the children's exposure to the offenders and risky environment. The results of this study do not support the exposure-reduce hypothesis; however, only foster care services were used to examine the interaction effect; there should be other ways that services can reduce children's exposure to risk. Studies testing more types of services are needed to confirm this conclusion. Lastly, the intervention of services may in fact increase children's likelihood of being repeatedly abused. Similar to retaliation effect (Dugan et al., 2003), the intervention of services may irritate the offenders and make them repeatedly abuse victims to "punish" them for reporting. If the protective effect of services cannot surpass their retaliation effect, the recurrence would increase.

Though most hypotheses were not supported by the data, the descriptive statistics and logistic regressions reveal several interesting findings. First of all, the child sexual abuse rate and child sexual abuse recurrence rate both present an upward tendency in recent years, and the recurrence rate experienced a significant decrease in 2011. Future research may look at these changes and find if there are any macro-level factors that can explain the change. Besides, the data for 2019 and 2020 are still needed to calculate the recurrence rate in 2017 and 2018. Secondly, the average time for the second incident to take place after the initial incident was 17.1 months, and as the number of incidents increased the duration to next incident decreased, which call attention that if the intervention was not involved in time, the sexually abused

children may be revictimized more often within a short period, which would largely impede their recovery from trauma. Thirdly, the characteristics of children, caregiver, family and offenders were different between children who only experienced child sexual abuse once and children who experienced recurrence. Fourthly, the chances of acquiring services were not equal in different incidents. Only 36.64% of victims who experienced sexual revictimization received services at the occurrence of their initial incidents. Even so, they were still more likely to receive services and receive more services than children who were only victimized once. The likelihood of receiving different types of services was also different between recurrent victims and non-recurrent victims, for recurrent victims were more likely to receive every type of 29 documented services in NCANDS.

Lastly, the results of regression show that the children who were female, using alcohol or drugs, and having behavioral problems were significantly more likely to be sexually revictimized. Since a large part of offenders were male, girls had a higher risk of being exposed to offenders. Using alcohol or drugs and having behavioral problems may expose children to a risky environment and social relationship, and thus increase their likelihood of being revictimized. It is also shown that living in an inadequate housing (a substandard, overcrowded, unsafe or homeless) made children less likely to experience recurrence, but there is not enough information to explain the reason why inadequate living environment would protect children from being victimized again. Living with a single mother or a single father increases children's risk of experiencing recurrence because it exposes the child to the offenders, who could be the parent's partner, and a single parent may not have sufficient ability and

resources to protect their children from being victimized again. If the offenders were younger and prior offenders, the children's risk of being victimized again significantly increased. The more offenders involved in the incident, the more likely that the children would experience recurrence. The findings related to other types of maltreatment are especially interesting. If the children also reported physical abuse, neglect, or psychological/emotional maltreatment besides sexual abuse, their likelihood of being victimized again would be significantly reduced. It may suggest that physical abuse, neglect, and emotional maltreatment were considered to be more serious maltreatment than sexual abuse, when they occurred together, they would be regarded as more severe maltreatment compared to the circumstance that only sexual abuse was reported. Another explanation is that the number of maltreatment matters, which means multi-type maltreatment was treated more seriously than single-type maltreatment.

This study has several limitations. The data used in this study are administrative data, which only captured incidents reported to CPS, and only those considered to be relatively severe were collected into the data. The selection bias cannot be ignored and it affects how we interpret the findings of this study. For example, the negative statistical effect of services does not necessarily suggest a detrimental effect in real cases. Because this data merely includes severe incidents and recurrence is also severer in nature than those incidents that only occurred once, we have no knowledge about the effect of services on incidents that were less severe. It is possible that some services do have an impact on child sexual abuse, but the effect is not large enough to prevent recurrence. Besides, the definitions of child sexual abuse were different in

different jurisdiction according to local law, the differences of definitions were not controlled in this study. Another limitation is that merely logistic regression was used in this study, and how services influence the duration of recurrence should have been explored using survival analysis. It is conceivable that child protective services may help prolong the duration between the initial incident and the subsequent incident. Additionally, only services that were listed in NCANDS data were examined, there were certainly other types of services available to children and their families. The data shows a large part of services received by children and their families were "other services", which lack sufficient details for this study to conduct the analysis. Future studies with more information available on contextual factors (caseload, relevant policies, etc.) and other services are needed to confirm the findings of this study. Lastly, the findings of this study reveal that services were not provided to victims and their families randomly, victims with certain characteristics, which may be seen as signs indicating the severer nature of their victimizations, were more likely to receive every listed service in the NCANDS data. Future studies may use other statistical techniques, such as propensity score matching, to compare those children who received services to those who didn't but had similar characteristics as the former to estimate the effect of services more accurately.

Appendix

Appendix A – Child Protective Services (CPS) listed in the NCANDS (NCANDS Child File Codebook, 2020)

Services	Subgroup	Definition
Family Support Services	Family-related services	Community-based services or activities that assist and support parents in their role as caregivers. These services are designed to improve parental competency and healthy child development by helping parents enhance their strengths and resolve problems that may lead to child maltreatment, developmental delays, and family disruption.
Family Preservation Services	Family-related services	Services or activities designed to help families alleviate crises that might lead to out-of-home placement of children; maintain the safety of children in their own homes; support families preparing to reunify or adopt; and assist families in obtaining services and other supports necessary to address their multiple needs in a culturally sensitive manner.
Foster Care Services	Child-related services	Twenty-four-hour substitute care for children placed away from their parents or guardians and for whom the state agency has placement and care responsibility. This includes family foster homes, group homes, emergency shelters, residential facilities, childcare institutions, etc.
Juvenile Court Petition	Child-related services	A legal document requesting that the court take action regarding the child's status as a result of the CPS response. A petition was used, for example, for emergency custody, shelter order, removal from the home, adoption, guardianship, emancipation or other changes in a child’s custody, supervision or placement.
Court-Appointed Representative	Child-related services	A person appointed by the court to represent or advocate for a child in a neglect or abuse proceeding. May be an attorney or a Court-Appointed Special Advocate (or both) and is often referred to as a Guardian ad Litem. Makes

		recommendations to the court concerning the best interests of the child
Adoption Services	Child-related services	Services or activities provided to assist in bringing about the adoption of a child.
Case Management Services	Child-related services/ Family-related services	Services or activities for the arrangement, coordination, and monitoring of services to meet the needs of individuals (children) and their families.
Counseling Services	Child-related services/ Family-related services	Services or activities that apply the therapeutic processes to personal, family, situational, or occupational problems to bring about a positive resolution of the problem or improved individual or family functioning or circumstances. Problem areas may include family and marital relationships.
Daycare Services-Child	Child-related services	Services or activities for children (including infants, pre-school, and school age children) provided in a setting that meets applicable standards of state and local law, in a center or in a home, for a portion of a 24-hour day.
Educational and Training Services	Family-related services/ Child-related services	Services or activities provided to improve knowledge or daily living skills and to enhance cultural opportunities. Services may include instruction or training in, but are not limited to, such issues as: consumer education, health education, community protection and safety education, literacy education, English as a second language, and General Educational Development (G.E.D.).
Employment Services	Caregiver-related services	Services or activities provided to assist individuals in securing employment or acquiring or learning skills that promote opportunities for employment.
Family Planning Services	Family-related services	Educational, comprehensive medical or social services or activities which enable individuals, including minors, to determine freely the number and spacing of their children and to select the means by which this may be achieved.
Health-Related and Home Health Services	Family-related services	In-home or out-of-home services or activities designed to assist individuals and families to attain and maintain a favorable condition of health.

Home-Based Services	Family-related services	In-home activities provided to individuals or families to assist with household or personal care that improve or maintain family well-being.
Housing Services	Family-related services/ Child-related services	Services or activities designed to assist individuals or families in locating, obtaining, or retaining suitable housing.
Independent and Transitional Living Services	Child-related services	Services or activities designed to help older youth in foster care or homeless youth make the transition to independent living, or to help adults make the transition from an institution, or from homelessness, to independent living.
Information and Referral Services	Child-related services	Services or activities designed to provide information about services provided by public and private service providers and a brief assessment of client needs (but not diagnosis and evaluation) to facilitate appropriate referral to these community resources.
Legal Services	Child-related services	Services or activities provided by a lawyer or other person(s) under the supervision of a lawyer to assist individuals in seeking or obtaining legal help in civil matters such as housing, divorce, child support, guardianship, paternity, and legal separation.
Mental Health Services	Child-related services	Services or activities which aim to overcome issues involving emotional disturbance or maladaptive behavior adversely affecting socialization, learning, or development. Usually provided by public or private mental health agencies and includes both residential and non-residential activities.
Pregnancy and Parenting Services for Young Parents	Family-related services	Services or activities for married or unmarried adolescent parents and their families designed to assist young parents in coping with the social, emotional, and economic problems related to pregnancy and in planning for the future.
Respite Care Services	Caregiver-related services	Services or activities involving the temporary care of the children in order to provide relief to the caregiver.
Special Services-Disabled	Child-related services	Special services or activities for persons with developmental or physical disabilities, or persons with visual or auditory impairments, to maximize the

		potential of persons with disabilities, help alleviate the effects of physical, mental, or emotional disabilities, and to enable these persons to live in the least restrictive environment possible.
Special Services-Juvenile Delinquent	Child-related services	Special services or activities for youth involved in or at risk of involvement with criminal activity who are, or who may become, involved with the juvenile justice system and their families.
Substance Abuse Services	Caregiver-related services	Services or activities that are primarily designed to deter, reduce, or eliminate substance abuse or chemical dependency.
Transportation Services	Child-related services	Services or activities that provide or arrange for travel, including travel costs, of individuals in order to access services, or obtain medical care or employment.
Other Services	Other services	Services or activities that have been provided to the child and/or family, but which are not included in the services listed in the Child File record layout.

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